

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A method for monitoring the subsurface under a facility for volatile organic compounds, comprising:

5 evaluating a facility for applicability of subsurface monitoring of volatile organic compounds;

if subsurface monitoring of volatile organic compounds is appropriate at the facility, determining the location at which to monitor subsurface volatile organic compounds at the facility;

10 installing a volatile organic compound monitoring station at the determined location at the facility;

collecting soil vapor samples using the volatile organic compound monitoring station; and

15 analyzing the collected soil vapor sample for the presence of volatile organic compounds.

2. The method of claim 1, wherein determining the location at which to monitor subsurface volatile organic compounds at the facility is based on at least one of the proximity to where volatile organic compounds are found at the facility or the location where volatile organic compound release to the subsurface under the facility is made possible by the facility structure.

3. The method of claim 1, further comprising if volatile organic compounds are present in the collected soil vapor sample, investigating the subsurface under the facility to determine if significant quantities of volatile organic compounds are present.

4. The method of claim 1, further comprising if volatile organic compounds are not present in the collected soil vapor sample, maintaining data related to the collected soil vapor sample.

5. A method for installing a volatile organic compound monitoring station for sampling soil gas in the subsurface under a facility, comprising:

creating a surface penetration at a facility;

inserting a monitoring station into the surface penetration; and

forming a seal between the monitoring station and the facility surface.

6. The method of claim 5, wherein forming a seal between the monitoring station and the facility surface further comprises applying a sealant to the facility surface substantially around the surface penetration to facilitate creation of the seal between the monitoring station and the facility surface.

7. The method of claim 5, wherein the monitoring station has a hollow, generally tubular shape and further comprising closing the monitoring station by inserting a monitoring station cap into the hollow, generally tubular-shaped monitoring station.

8. A method for obtaining a sample of soil gas from the subsurface under a facility surface, comprising:

coupling a sampling pump to a monitoring station inserted into a surface penetration in the facility surface, wherein the monitoring station is in communication with the subsurface under the facility surface;

if the soil gas in the subsurface under the facility surface needs to be purged, drawing and releasing a sample of soil gas from the subsurface through the monitoring station using the sampling pump;

drawing a sample of soil gas from the subsurface through the monitoring station
using the sampling pump.

9. The method of claim 8, wherein the monitoring station has a first monitoring end
through which soil gas samples are drawn and a second sampling end configurable to be
5 coupled to the sampling pump.

10. The method of claim 8, wherein:
the monitoring station has a substantially hollow, generally tubular shape;
the monitoring station is closed using a monitoring station cap; and
coupling a sampling pump to the monitoring station further comprises removing
10 the monitoring station cap.

11. A method for obtaining a sample of soil gas from the subsurface under a facility
surface, comprising:
coupling a sampling adaptor to a monitoring port inserted into a surface
penetration in the facility surface, wherein the monitoring port is in
15 communication with the subsurface under the facility surface;
attaching a sampling pump to the sampling adaptor;
if the soil gas in the subsurface under the facility surface needs to be purged,
drawing and releasing a sample of soil gas from the subsurface through the
sampling adaptor using the sampling pump;
20 drawing a sample of soil gas from the subsurface through the sampling adaptor
using the sampling pump.

12. The method of claim 11, wherein:
the monitoring port has a substantially hollow, generally tubular shape;
the monitoring port is closed using a monitoring port cap; and

coupling a sampling adaptor to the monitoring port further comprises removing the monitoring port cap.

13. A system for monitoring the subsurface under a facility surface for volatile organic compounds, comprising:

5 a monitoring station inserted into a surface penetration in the facility surface so as to provide communication between the monitoring station and the subsurface under the facility surface;

a sampling pump configurable to be coupled to the monitoring station for drawing a sample of soil gas from the subsurface through the monitoring station; and

10 wherein:

the sampling pump is coupled to the monitoring station; and

a soil gas sample is drawn from the subsurface through the monitoring station using the sampling pump.

14. The system of claim 13, wherein soil gas is drawn from the subsurface through the monitoring station using the sampling pump to purge the soil gas prior to obtaining a soil gas sample.

15. A system for monitoring the subsurface under a facility surface for volatile organic compounds, comprising:

20 a soil probe inserted into a surface penetration in the facility surface, where the surface penetration provides communication between the soil probe and the subsurface under the facility surface, comprising:

a monitoring port secured within the surface penetration having an end filter in communication with the subsurface under the facility surface;

a monitoring port cap configured to close the monitoring port to minimize the movement of undesirable materials between the facility atmosphere and the subsurface via the monitoring port; and

a sampling adaptor configured to interface with the monitoring port to allow the withdrawal of a soil gas sample from the subsurface under the facility surface;

a sampling pump configured to interface with the sampling adaptor and withdraw a soil gas sample from the subsurface under the facility surface; and wherein:

the monitoring port cap is removed from the monitoring port prior to interfacing the sampling pump with the sampling adaptor; and a soil gas sample is drawn through the monitoring port and the sampling adaptor using the sampling pump.

16. The system of claim 15, wherein soil gas is drawn from the subsurface through the sampling adaptor using the sampling pump to purge the soil gas prior to obtaining a soil gas sample.

17. A soil probe for monitoring the subsurface under a facility surface for volatile organic compounds, comprising:

a monitoring port having an end filter in communication with the subsurface under the facility surface;

a monitoring port cap configured to close the monitoring port to minimize the movement of undesirable materials between the facility and the subsurface via the monitoring port; and

a sampling adaptor configured to interface with the monitoring port and a sampling pump to allow the withdrawal of a soil gas sample from the subsurface under the facility surface.

18. The soil probe of claim 17, wherein:

5 the monitoring port further comprising a threaded neck; and
the soil probe further comprises a securing member having threads corresponding to and configured to interface with the threaded neck of the mounting plate to secure the mounting plate so that the end filter of the mounting plate extends into the subsurface under the facility surface.

10 19. The soil probe of claim 17, wherein:

the monitoring port is a substantially hollow, generally tubular-shaped member having a threaded interior; and
the monitoring port cap has a threaded exterior corresponding to and configured to interface with the threaded interior of the monitoring port.

15 20. The soil probe of claim 17, wherein:

the monitoring port has a locking aperture; and
further comprising a locking tool for use in the installation of the monitoring port, the locking tool having an end corresponding in size and shape to the locking aperture of the monitoring port.

20 21. The soil probe of claim 17, wherein:

the monitoring port cap has turning recesses formed therein; and -
further comprising a cap tool for use in the installation of the monitoring port cap, the cap tool having turning pins corresponding in size and shape to the turning recesses of the monitoring port cap.

22. The soil probe of claim 17, wherein:

the monitoring port cap has at least one sealing means designed to create a substantially liquid and airtight seal between the monitoring port cap and the monitoring port when the monitoring port cap is used to close the monitoring port.

23. A soil probe for monitoring the subsurface under a facility surface for volatile organic compounds, comprising:

a means for allowing soil gas to be drawn from the subsurface under the facility surface;

a means for minimizing the movement of undesirable materials between the facility and the subsurface via the means for allowing soil gas to be drawn from the subsurface under the facility surface; and

a means for withdrawing a soil gas sample from the subsurface under the facility surface via the means for allowing soil gas to be drawn from the subsurface under the facility surface.